(**Adopted:** mm/dd/yy)

RULE 1160.1
Internal Combustion Engines in Agricultural Operations[1]

(A) General

(1) Purpose:

(a) The purpose of this rule is to limit the emissions of oxides of nitrogen (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) from Internal Combustion Engines used in Agricultural Operations.

(2) Applicability:

(a) This rule applies to any Internal Combustion Engine used in an Agricultural Operation with a Rated Brake Horsepower of fifty (50) or more.

(B) Definitions

(1) "Agreement to Electrify" – A binding, non-cancelable contract written by the APCO and signed by the operator and the APCO within sixty (60) days of the date of adoption of this rule that commits the operator to complying with the requirements of subsection (C)(1)(a) or subsection (C)(1)(b) of this rule by electrifying.

(2) "Agricultural Operation" – The growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. Agricultural Operations do not include activities involving the processing or distribution of crops or fowl. *[Derived from 17 CCR §93115.4(a)(1)]*

(3) "Air Pollution Control Officer (APCO)" – The person appointed to the position of Air Pollution Control Officer of the District pursuant to the provisions of California Health and Safety Code §40750 and his or her designee. *[Derived from District Rule 1301(E)]*

(4) "Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines" – The most recent version of the ATCM contained in title 17 of the California Code of Regulations §§93115 through 93115.15.

(5) "California Air Resources Board (CARB)" – The California State Air Resources Board, the powers and duties of which are described in Part 2 of Division 26 of

1 The majority of this rule is derived from SJVUAPCD Rule 4702 – *Internal Combustion Engines - Phase 2 (as adopted 01/18/07)* unless otherwise indicated.

the California Health & Safety Code (commencing with section 39500). [*Derived from Rule 1301 – Definitions*]

(6) "California Reformulated Gasoline" – Gasoline meeting CARB requirements for motor vehicle fuel in accordance with California Code of Regulations, Chapter 5, Article 1, Subarticle 2 - Standards for gasoline sold beginning March 1, 1996.

(7) "Certified Compression-Ignited Engine" – A Tier 1, Tier 2, Tier 3, or Tier 4 compression-ignited engine that is United States Environmental Protection Agency (USEPA) certified as specified in Title 40 Code of Federal Regulations Part 89 or in Title 40 Code of Federal Regulations Part 1039.

(8) "Certified Spark-Ignited Engine" – A Spark-Ignited engine that is used exclusively in Agricultural Operations and that is California Air Resources Board (CARB) certified as specified in Title 13, Division 3, Chapter 9, Article 4.5, Section 2433 of the California Code of Regulations and that has been certified to meet a Certification Level for hydrocarbon plus NO_x emissions of 0.6 grams/bhp-hr (40.2 ppmv) or less.

(9) "CO" –Carbon monoxide.

(10) "Compression-Ignited (CI) Internal Combustion Engine" – An engine that uses the heat of compression to initiate combustion.

(11) "Cyclic Loaded Engine" – An Internal Combustion Engine that, under normal operating conditions, varies in shaft load by forty (40) percent or more of Rated Brake Horsepower during recurrent periods of thirty (30) seconds or less or is used to power an oil well reciprocating pump unit.

(12) "De-rated Engine" – An Internal Combustion Engine which has been physically limited and restricted by permit condition to an operational level of less than fifty (50) horsepower.

(13) "Diesel Engine" – A Compression-Ignited Internal Combustion Engine.

(14) "Disaster or State of Emergency" – A fire, Flood, earthquake, or other similar natural catastrophe.

(15) "Distributed Generation (DG)" – Relatively small power plants, such as Internal Combustion Engine generator sets, which are used to generate electrical power that is either fed into the power grid or used on-site. DG units are located throughout the grid and are usually sited in or close to load centers or utility customers' sites. Distributed Generation also refers to a mechanical drive system consisting of one or more Internal Combustion Engines and electric motors, where use of the Internal Combustion Engines or electric motors is interchangeable.

(16) "Emergency Standby Engine" – An Internal Combustion Engine which operates as a temporary replacement for primary mechanical or electrical power during an

unscheduled outage caused by sudden and reasonably unforeseen natural Disasters or sudden and reasonably unforeseen events beyond the control of the operator.

(a) An engine shall be considered to be an Emergency Standby Engine if it is used only for the following purposes:

(i) Periodic maintenance, periodic readiness testing, or readiness testing during and after repair work;
(ii) Un-scheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and
(iii) If it is limited to operate one-hundred (100) hours or less per calendar year for non-emergency purposes.

(b) An engine shall not be considered to be an Emergency Standby Engine if it is used:

(i) To reduce the demand for electrical power when normal electrical power line service has not failed;
(ii) To produce power for the utility electrical distribution system; or
(iii) In conjunction with a voluntary utility demand reduction program or interruptible power contract.

(17) "Emissions Unit" - Any article, machine, equipment, other contrivance or combination thereof which emits or has the potential to emit any Regulated Air Pollutant.

(18) "Exhaust Control" – Device or technique used to treat an engine's exhaust to reduce NO_x, VOC, or CO emissions, and includes, but is not limited to, catalysts, afterburners, reaction chambers, and chemical injectors.

(19) "Facility" - Any building, structure, Emissions Unit, combination of Emissions Units, or installation which emits or may emit a Regulated Air Pollutant and which is:

(a) Located on one or more Contiguous or adjacent properties within the District;

(b) Under the control of the same person (or by persons under common control); and

(c) Belong to the same industrial grouping, as determined by being within the same two digit Standard Industrial Classification Code (SICC).

(d) For the purpose of this regulation, such above-described grouping, remotely located but connected only by land carrying a pipeline, shall not be considered one Facility as defined in Rule 1301 - *Definitions*.

(20) "Flood" – A sudden and reasonably unforeseen rising and overflowing of a body of water especially onto normally dry land.

(21) "Gaseous Fuel" – A fuel which is a gas at standard conditions including but not limited to natural gas, methane, ethane, propane, butane and liquefied petroleum gas (LPG).

(22) "Installation Date" – The date that an Internal Combustion Engine is initially placed at a Location in order to be operated for the first time in its lifetime.

(23) "Internal Combustion Engine" – Any spark- or compression-ignited reciprocating engine.

(24) "Lean-Burn Engine" – Any Spark-Ignited Internal Combustion Engine that is operated with an exhaust stream oxygen concentration of four (4) percent by volume, or greater prior to any exhaust stream control device.

(25) "Location" – Any single site at a building, structure, facility, or installation.

(26) "Military Tactical Equipment" – A transportable engine operated by the United States armed forces or National Guard which is designed specifically for military use in an off-road, dense terrain; hostile environment; or aboard military combat vessels.

(27) "Mobile Agricultural Equipment" – Equipment at an Agricultural Operation which is towed or mounted on a vehicle and is continuously moved during the operation of the equipment. Mobile Agricultural Equipment includes, but is not limited to sprayers, balers, and harvest equipment.

(28) "NO_x" – Oxides of nitrogen, calculated as equivalent nitrogen dioxide (NO_2).

(29) "Public Utilities Commission (PUC) Quality Natural Gas" – PUC Quality Natural Gas means high methane gas (at least eighty (80) percent methane by volume) as specified in PUC General order 58-A.

(30) "Rated Brake Horsepower" – The continuous brake horsepower rating specified for the engine by the manufacturer or listed on the nameplate of the unit, unless otherwise physically limited and specified by a condition on the engine's permit or Rule 114 registration.

(31) "Regulated Air Pollutant" - Any of the following Air Pollutants:

(a) Any air pollutant, and its precursors, for which an Ambient Air Quality Standard has been promulgated.

(b) Any air pollutant that is subject to a standard under 42 U.S.C. §7411, Standards of Performance for New Stationary Sources (Federal Clean Air Act §111) or the regulations promulgated thereunder.

(c) Any substance which has been designated a Class I or Class II substance under 42 U.S.C. §7671a (Federal Clean Air Act §602) or the regulations promulgated thereunder.

(d) Any Air Pollutant subject to a standard or other requirement established pursuant to 42 U.S.C. §7412, Hazardous Air Pollutants (Federal Clean Air Act §112) or the regulations promulgated thereunder.

(32) "Replacement Engine" – An engine that is installed to replace an engine that was in place as of June 16, 2005 and that such replacement is performed solely for the purpose of complying with the requirements of subsection (C)(1) of this rule.

(33) "Rich-Burn Engine" – Any Spark-Ignited Internal Combustion Engine that is operated with an exhaust stream oxygen concentration of less than four (4) percent by volume prior to any exhaust stream control device.

(34) "Spark-Ignited Internal Combustion Engine" – A liquid or Gaseous Fueled engine designed to ignite its air/fuel mixture by a spark across a spark plug.

(35) "Tier 1 Engine, Tier 2 Engine, Tier 3 Engine, and Tier 4 Engine" – A CI engine that is certified to meet the Tier 1, Tier 2, Tier 3, or Tier 4 Off-Road CI Certification Standards as specified in Title 13, California Code of Regulations, section 2423. [Title 17 CCR §93115.4 ATCM for Stationary CI Engines – Definitions]

(36) "United States Environmental Protection Agency (USEPA)" – The United States Environmental Protection Agency, the Administrator of the USEPA and his or her authorized representative.

(37) "Volatile Organic Compound (VOC)" – Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions other than those compounds listed in 40 CFR 51.100(s)(1).

(38) "Waste Gas" – An untreated, raw gas derived through a natural process, such as anaerobic digestion, from the decomposition of organic waste at municipal solid waste landfills or publicly owned wastewater treatment facility. Waste Gas includes landfill gas which is generated at landfills, digester gas which is generated at sewage treatment facilities, or a combination of the two.

(39) "Wind Machine" – A machine consisting of a large fan mounted on a tower powered by an Internal Combustion Engine, used exclusively to provide protection to crops, including, but not limited to oranges, lemons, and grapes, from cold weather by effecting a heat transfer by moving warmer atmospheric air downward and mixing it with the colder air surrounding a crop.

(C) Requirements

(1) Engine Emission Standards and Compliance Schedules

(a) Spark-Ignited Internal Combustion Engines

(i) Emission Limits/Standards:

The owner of a Spark-Ignited Internal Combustion Engine shall not operate it in such a manner that results in emissions exceeding the limits in Table 1 below.

Table 1
Emission Limits/Standards and Compliance Schedule for a Spark-Ignited Internal Combustion Engine (corrected to fifteen (15) percent oxygen on a dry basis)

Engine Type	**NO_x**	**CO**	**VOC**
Rich Burn	90 ppmv or 80% reduction	2000 ppmv	250 ppmv
Lean Burn	150 ppmv or 70% reduction	2000 ppmv	750 ppmv

(ii) Replacement Restriction:

a. The owner of a Spark-Ignited Internal Combustion Engine shall not replace such engine with an engine that emits more emissions of NO_x, VOC, and CO, on a ppmv basis, (corrected to fifteen (15) percent oxygen on a dry basis) than the engine being replaced.

(iii) Compliance Schedule:

a. The owner of a Spark-Ignited Internal Combustion Engine that is subject to the requirements of this rule shall be in full compliance with this rule not later than six (6) months after the date of adoption of this rule; or

b. If the owner has an Agreement to Electrify, the owner shall be in full compliance with the requirements of this rule not later than eighteen (18) months after the date of adoption of this rule.

(iv) Fuel Requirement:

a. California Reformulated Gasoline shall be used as the fuel for all gasoline-fired, Spark-Ignited Internal Combustion Engines.

(b) Compression-Ignited Internal Combustion Engines

(i) Emission Limits/Standards and Compliance Schedules:

a. The owner of a Compression-Ignited Internal Combustion Engine shall repower, replace or control the engine to comply with the applicable limits/standards and compliance dates in the Airborne

Toxic Control Measures for Stationary Compression Ignition Engines.

(ii) Replacement Restriction:

a. The owner of a Compression-Ignited Internal Combustion Engine that is subject to the requirements of subection (C)(1) shall not replace such engine with an engine, that emits more emissions of NO_x, VOC, and CO, on a ppmv basis, (corrected to fifteen (15) percent oxygen on a dry basis) than the engine being replaced.

(iii) Fuel Requirement:

a. California Ultra Low Sulfur Diesel or the equivalent shall be used as the fuel for all liquid fired compression ignited engines.

(2) Submission of Emission Control Plan (ECP), Alternative Emission Control Plan (AECP), Inspection and Monitoring (I&M) Plan, and/or Authority to Construct Application

(a) The owner of an engine that is required to submit an authority to construct application, an ECP required pursuant to subsection (D)(2), AECP required pursuant to subsection (D)(3), or I&M Plan required pursuant to subsection (D)(4), shall submit the required document(s) no later sixty (60) days of the date of adoption of this rule, or within sixty (60) days of becoming subject to this rule.

(D) Administrative Requirements

(1) Permanent Removal of an Engine

The owner of an engine who elects to permanently remove the engine from service shall comply with all of the following conditions:

(a) Comply with all applicable requirements of this rule until the engine is permanently removed from service;

(b) Submit a letter to the APCO no later than fourteen (14) days before the engine is permanently removed from service, stating the intent to permanently remove the engine from service. The engine removal letter can be submitted with the emission control plan for the Replacement Engine, if any; and

(c) Permanently remove the engine from service and officially surrender the permit or Rule 114 registration, if any, to the APCO no later than thirty (30) days after the engine is permanently removed from service.

(2) Emission Control Plan (ECP)

The owner of an engine subject to the requirements of subsection (C)(1), of this rule shall submit to the APCO an APCO-approvable emission control plan of all

actions to be taken to satisfy the emission requirements of subsection (C)(1) within sixty (60) days of the engine becoming subject to this rule.

(a) The requirement to submit an ECP shall not apply to an engine specified below:

(i) A Certified Spark-Ignited Engine that has not been retrofitted with an Exhaust Control or catalytic emission control device and is in compliance with the requirements of subsection (C)(1)(a);
(ii) A Certified Compression-Ignited Engine that has not been retrofitted with an Exhaust Control and is in compliance with the requirements of subsection (C)(1)(b); or
(iii) An engine with an operating Exhaust Control system that has been certified in accordance with subsection (D)(5) Exhaust Control System Certification Requirements.

(b) An ECP shall contain the following information, as applicable for each engine:

(i) Permit number, or Rule 114 registration number;
(ii) Engine manufacturer;
(iii) Model designation and engine serial number;
(iv) Rated Brake Horsepower;
(v) Type of fuel and type of ignition;
(vi) Combustion type: rich-burn or lean-burn;
(vii) Total hours of operation in the previous one-year period, including typical daily operating schedule;
(viii) Fuel consumption (cubic feet for gas or gallons for liquid) for the previous one-year period;
(ix) Stack modifications to facilitate continuous in-stack monitoring and to facilitate source testing;
(x) Type of control to be applied, including in-stack monitoring specifications;
(xi) Applicable emission limits;
(xii) Documentation showing existing emissions of NO_x, VOC, and CO; and
(xiii) Date that the engine will be in full compliance with this rule.
(xiv) The ECP shall identify the type of emission control device or technique to be applied to each engine and a construction/removal schedule, or shall provide support documentation sufficient to demonstrate that the engine is in compliance with the emission requirements of this rule.
(xv) For an engine being permanently removed from service, the ECP shall include a letter of intent pursuant to subsection (D)(1).

[Moved to new section (C)(2)]

(3) Alternative Emission Control Plan (AECP)

An owner may comply with the NO_x emission requirements of subsection (C)(1) for a group of engines by meeting the requirements below. An engine that is not subject to subsection (C)(1) is not eligible for inclusion in an AECP.

(a) The owner may submit the AECP in lieu of an ECP. The AECP shall:

(i) Not be implemented prior to APCO approval.
(ii) Be enforceable on a daily basis by the District.
(iii) Contain any information necessary to determine eligibility of the engines for alternative emission control, including, but not limited to:
a. A list of engines subject to the AECP. All engines in an AECP shall be under the operational control of a single owner and shall be located at a single Facility.
b. The NO_x emission factor established by the engine owner for each engine pursuant to subsection (D)(3)(b).
c. The estimated aggregate NOx emissions calculated according to subsection (D)(3)(c).
(iv) Present the methodology for determining equivalency of actual NO_x emissions under the proposed AECP as compared to the estimated NO_x emissions allowed by this rule.
(v) Detail the method of recording and verifying daily compliance with the AECP.
(vi) Demonstrate to the satisfaction of the APCO that the difference between the NO_x emission limits of this rule and any lower actual NO_x emissions will not be used to increase emissions from the same or another source.
(vii) Demonstrate that the engines subject to the requirements of subsection (C)(1) are in compliance with or on an approved schedule for compliance with all applicable District rules.

(b) The owner shall establish a NO_x emission factor limit for each engine. The established NO_x emission factor of an engine shall be not less than the NO_x emission factor of the engine from the emission factor established pursuant to subsection (D)(2) and approved by the APCO. The owner shall not operate an AECP engine in such a manner that NO_x emissions exceed the established NO_x emission factor of the engine.

(c) During any seven (7) consecutive calendar day period, the owner shall operate all engines in the AECP to achieve an actual aggregate NO_x emission level that is not greater than ninety (90) percent of the NO_x emissions that would be obtained by controlling the engines to comply individually with the NO_x limits in subsection (C)(1). The owner shall operate engines in the AECP such that:

$$AE_{Actual} \leq 0.90\ (AE_{Limit})$$

and shall notify the APCO within twenty-four (24) hours of any violation of this subsection.

(i) The actual aggregate NO_x emissions (AE_{Actual}) is the sum of the actual NO_x emissions, over a seven (7) consecutive calendar day period, from all engines in the AECP which were actually operated during that period. AE_{Actual} shall be calculated as follows:

$$AE_{Actual} = \sum_i (EF_i)(F_i)(k_i)$$

where:

i identifies each engine in the AECP.
EF_i is the NO_x emission factor of the engine established pursuant to subsection (D)(3)(b) and approved by the APCO.
F_i is the actual total fuel used by the engine during the seven (7) consecutive calendar day period.
k_i is a constant used to convert an engine's fuel use and NO_x emission factor to the amount of NO_x emitted. k_i is dependent on the engine and the pollutant emitted. Calculation of k_i shall be accomplished using 40 CFR Part 60, Appendix A, Method 19, or an equivalent method approved by USEPA, CARB and the APCO.

(ii) The estimated aggregate NO_x emissions limit (AE_{Limit}) is the sum of the NO_x emissions, over a seven (7) consecutive calendar day period, for the same engines in the AECP which were actually operated during the same period as considered in subsection (D)(3)(c), calculated with the NO_x limits of subsection (C)(1) and the actual fuel usage during that seven (7) consecutive calendar day period. AE_{Limit} shall be calculated as follows:

$$AE_{Limit} = \sum_i (EL_i)(F_i)(k_i)$$

where:

i identifies each engine in the AECP.
EL_i is the NO_x emission limit from subsection (C)(1) for each engine.
F_i is the actual total fuel used by the engine during the seven (7) consecutive calendar day period.
k_i is a constant used to convert an engine's fuel use and NO_x emission limit to the amount of NO_x emitted. k_i is dependent on the engine and the pollutant emitted. Calculation of k_i shall be

accomplished using 40 CFR Part 60, Appendix A, Method 19, or an equivalent method approved by USEPA, CARB and the APCO.

(iii) Only engines in the AECP which were operated during the seven (7) consecutive calendar day period shall be included in the calculations of AE_{Limit} and AE_{Actual}.

(iv) The owner shall, at least one (1) time each day the AECP is used, calculate and record the actual aggregate NO_x emissions (AE_{Actual}) and the aggregate NO_x emission limit (AE_{Limit}) for the preceding seven (7) consecutive calendar day period.

(d) The owner shall submit an updated or modified AECP for approval by the APCO prior to any of the following:

(i) Modification of the engine(s) which would require an application for an authority to construct.

(ii) When new or amended rules are adopted which regulate the emissions from the engines.

(iii) When the NO_x emission factor established by the engine owner for an engine pursuant to subsection (D)(3)(b) is modified.

(e) In addition to the records kept pursuant to section (F), the owner shall maintain records, on a daily basis, of the parameters needed to demonstrate compliance with the applicable NO_x emission limits when operating under the AECP. These records shall be retained for at least five (5) years, shall be readily available, and be made available to the APCO upon request. The records shall include, but are not limited to, the following for each engine unless otherwise indicated:

(i) Total hours of operation.

(ii) Type and quantity (cubic feet of gas or gallons of liquid) of fuel used.

(iii) The actual NO_x emissions limits to be included in the calculation of AE_{Actual} pursuant to subsection (D)(3)(c).

(iv) The actual aggregate NO_x emissions (AE_{Actual}) for all the engines in the AECP calculated pursuant to subsection (D)(3)(c).

(v) The estimated NO_x emissions limits to be included in the calculation of AE_{Limit} pursuant to subsection (D)(3)(c).

(vi) The estimated aggregate NO_x emissions (AE_{Limit}) for all the engines in the AECP calculated pursuant to subsection (D)(3)(c).

(vii) The comparison of the actual aggregate NO_x emissions (AE_{Actual}) for all the engines in the AECP and ninety (90) percent of the estimated aggregate NO_x emissions (AE_{Limit}) for all the engines in the AECP to demonstrate compliance with subsection (D)(3)(c).

(viii) Any other parameters needed to demonstrate daily compliance with the applicable NO_x emission limits when operating under the AECP.

(4) Inspection and Monitoring (I&M) Plan

The owner of an engine that is subject to the requirements of subsection (C)(1), shall submit to the APCO for approval, an I&M Plan. The actions to be identified in the I&M Plan shall include, but are not limited to, the information specified below:

(a) The following engines are not required to submit I&M Plans:

(i) A Certified Engine that has not been retrofitted with an Exhaust Control and is in compliance with the requirements of subsection (C)(1).

(ii) An engine with an operating Exhaust Control system that has been certified in accordance with subsection (D)(5) Exhaust Control System Certification Requirements.

(b) Procedures requiring the owner or operator to establish ranges for control equipment parameters, engine operating parameters, and engine exhaust oxygen concentrations that source testing has shown result in pollutant concentrations within the rule limits.

(c) Procedures for monthly inspections as approved by the APCO. The applicable control equipment parameters and engine operating parameters will be inspected and monitored monthly in conformance with a regular inspection schedule listed in the I&M Plan.

(d) Procedures for the corrective actions on the noncompliant parameter(s) that the owner or operator will take when an engine is found to be operating outside the acceptable range for control equipment parameters, engine operating parameters, and engine exhaust NO_x, CO, VOC, or oxygen concentrations.

(e) Procedures for the owner or operator to notify the APCO when an engine is found to be operating outside the acceptable range for control equipment parameters, engine operating parameters, and engine exhaust NO_x, CO, VOC, or oxygen concentrations.

(f) Procedures for preventive and corrective maintenance performed for the purpose of maintaining an engine in proper operating condition.

(g) Procedures and a schedule for using a portable NO_x analyzer to take NO_x emission readings pursuant to subsection (F)(6)(a)(iii).

(h) Procedures for collecting and recording required data and other information in a form approved by the APCO including, but not limited to, data collected through the I&M Plan and the monitoring systems described in section (F). Data collected through the I&M Plan shall have retrieval capabilities as approved by the APCO.

(i) Procedures for revising the I&M Plan. The I&M Plan shall be updated to reflect any change in operation. The I&M Plan shall be updated prior to any planned change in operation. An engine owner that changes significant I&M Plan elements must notify the District no later than seven (7) days after the change and must submit an updated I&M Plan to the APCO no later than fourteen (14) days after the change for approval. The date and time of the change to the I&M Plan shall be recorded in the engine operating log. For new engines and modifications to existing engines, the I&M Plan shall be submitted to and approved by the APCO prior to issuance of the permit or Rule 114 registration. The owner of an engine may request a change to the I&M Plan at any time.

(5) Exhaust Control System Certification Requirements

(a) A system not certified by CARB or the USEPA shall be certified by the APCO and comply with the requirements of subsections (D)(5)(b) through (D)(5)(c).

(b) To be considered for APCO certification, the manufacturer or operator shall comply with all of the following requirements:

(i) Certification shall be based upon the emission source testing results of a specific Exhaust Control System.
(ii) A source testing protocol shall be submitted for approval by the APCO prior to conducting the source test. The source testing protocol approved by the APCO shall be strictly adhered to during certification source testing.
(iii) Source testing shall be conducted over the range of operating parameters for which the unit(s) will be operated.
(iv) The source testing results shall demonstrate compliance with the emission limits of this rule for each model of Exhaust Control System(s) to be certified.
(v) The source testing procedure and reports shall be prepared by a CARB approved independent testing laboratory, and shall contain all the elements identified in the APCO-approved source testing protocol.
(vi) Source testing shall be conducted no more than ninety (90) days prior to the date of submission of request for certification by the APCO.
(vii) Any additional supporting information required by the APCO to address other performance parameters.

(c) The manufacturer or operator requesting certification shall submit to the APCO the following information:

(i) Copies of the source testing results conducted pursuant to the requirements of subsection (D)(5)(a), and other pertinent technical

data to demonstrate compliance with the emission limits of this rule.

(ii) The applicant shall sign and date the statement attesting to the accuracy of all information in the statement.

(iii) Name and address of the Exhaust Control System manufacturer or operator, brand name of the Exhaust Control unit, model number, and description of model of system(s) being certified.

(d) The APCO will only approve an application for certification to the extent that the requirements of subsections (D)(5)(b) through (D)(5)(c) are met and the source testing results demonstrate that the emission limits of this rule are met.

(e) The APCO-approved certification is valid only for the range of operating parameters and conditions for which certification is issued.

(f) The APCO shall publish a list of certified Exhaust Control Systems after the certification process is completed.

(E) Exemptions

(1) The requirements of this rule shall not apply to the following engines:

(a) An engine used to propel implements of husbandry, as that term is defined in section 36000 of the California Vehicle Code, as that section existed on January 1, 2003.

(b) An engine used exclusively to power a Wind Machine.

(c) A engine de-rated to less than 50 horsepower, provided the de-rating occurred before June 1, 2005

(d) An engine used exclusively to power Mobile Agricultural Equipment.

(2) Except for the requirements of subsection (F)(4), the requirements of this rule shall not apply to an Emergency Standby Engine provided that it is operated with a functional non-resettable hour meter. In lieu of a non-resettable hour meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the hour meter or alternative device in accordance with the manufacturer's instructions.

(3) Except for the administrative requirements of subsection (F)(5)(b), the requirements of this rule shall not apply to an Internal Combustion Engine registered as a portable emissions unit under the Statewide Portable Equipment Registration Program pursuant to sections 2450-2465, Article 5, Title 13, California Code of Regulations.

(4) Loss of Exemption

The owner of an engine which becomes subject to the emission limits/standards of this rule through loss of exemption shall not operate the subject engine, except as required for obtaining a new or modified permit or Rule 114 registration for the engine, until the owner demonstrates that the subject engine is in full compliance with the requirements of this rule.

(F) Monitoring and Recordkeeping Requirements

(1) Continuous Emissions Monitoring Systems (CEMS)

(a) All CEMS emissions measurements shall be averaged over a period of fifteen (15) consecutive minutes. Any fifteen (15) consecutive minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule.

(2) Percent emission reductions, if used to comply with the NO_x emission limits of subsection (C)(1), shall be calculated as follows:

(a) For engines with external control devices that are not operated in combination with a second emission control device or technique, percent reduction shall be calculated using emission samples taken at the inlet and outlet of the control device.

(b) For engines without external control devices and for engines with an external control device in combination with a second emission control device or technique, percent reduction shall be based on source test results for the uncontrolled engine and the engine after the control device or technique has been employed. In this situation, the engine's typical operating parameters, loading, and duty cycle shall be documented and repeated at each successive post-control source test to ensure that the engine is meeting the percent reduction limit. When representative source sampling prior to the application of an emissions control technology or technique is not available, the APCO may approve the use of a manufacturer's uncontrolled emissions information or source sampling from a similar, uncontrolled engine.

(3) The owner of an Internal Combustion Engine that uses percent emission reduction to comply with the NO_x emission limits of subsection (C)(1) shall provide an accessible inlet and outlet on the external control device or the engine as appropriate for taking emission samples and as approved by the APCO.

(4) Engine Monitoring Requirements

The owner of any engine subject to this rule shall:

(a) Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

(b) Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

(c) Install and operate a non-resettable hour meter. In lieu of installing a non-resettable hour meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by permit or Rule 114 registration condition. The owner of the engine shall properly maintain and operate the hour meter or alternative device in accordance with the manufacturer's instructions.

(d) The owner of an Spark-Ignited Internal Combustion Engine that has been retrofitted with a NO_x Exhaust Control that has not been certified in accordance with subsection (C)(5) Exhaust Control System Certification Requirements, or a compression-ignited engine that has been retrofitted with a NO_x Exhaust Control shall use a portable NO_x analyzer to take NO_x emission readings to demonstrate compliance with the emission requirements of subsection (C)(1), in compliance with the following:

(i) The owner of a compression-ignited engine that is subject to the limits/standards of subsection (C)(1), shall use a portable NO_x analyzer to take NO_x emission readings at least once every six (6) months that the engine is operated.

(ii) The owner of any other engine that has been retrofitted with a NO_x Exhaust Control shall use a portable NO_x analyzer to take NO_x emission readings at least once every twenty-four (24) months that the engine is operated.

(iii) All emission readings shall be taken with the engine operating either at conditions representative of normal operations or conditions specified in the permit or Rule 114 registration.

(iv) The NO_x analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO.

(v) All NO_x emissions readings shall be reported to the APCO in a manner approved by the APCO.

(vi) NO_x emission readings taken pursuant to this section shall be averaged over a fifteen (15) consecutive-minute period by either taking a cumulative fifteen (15) consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the fifteen (15) consecutive-minute period.

(5) Recordkeeping

(a) The owner of an engine subject to the requirements of subsection (C)(1) of this rule shall maintain an engine operating log to demonstrate compliance

with this rule. This information shall be retained for a period of at least five (5) years, shall be readily available, and be made available to the APCO upon request. The engine operating log shall include, on a monthly basis, the following information:

(i) Total hours of operation;
(ii) Type of fuel used;
(iii) Maintenance or modifications performed;
(iv) Monitoring data;
(v) Compliance source test results;
(vi) Any other information necessary to demonstrate compliance with this rule; and
(vii) The quantity (cubic feet of gas or gallons of liquid) of fuel used on a daily basis.

(b) An owner claiming an exemption under subsection (E)(2) or subsection (E)(3) shall maintain annual operating records. This information shall be retained for at least five (5) years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, the following:

(i) Total hours of operation;
(ii) The type of fuel used;
(iii) The purpose for operating the engine;
(iv) For Emergency Standby Engines, all hours of non-emergency and emergency operation shall be reported; and
(v) Other support documentation necessary to demonstrate claim to the exemption.

(6) Compliance Testing

The owner of an engine subject to the requirements of subsection (C)(1), shall comply with the following requirements, except for an engine specified in subsection (D)(2)(a):

(a) Demonstrate compliance with applicable limits, ppmv or percent reduction, in accordance with the test methods in section (G), as specified below:

(i) By the applicable date specified in subsection (C)(1)(a), subsection (C)(1)(b), and at least once every twenty-four (24) months thereafter.
(ii) By the applicable date specified in subsection (C)(1)(a), subsection (C)(1)(b), and at least once every sixty (60) months thereafter, for a Spark-Ignited engine that has been retrofitted with a catalytic emission control device.
(iii) A portable NO_x analyzer may be used to show initial compliance with the applicable limits/standards in subsection (C)(1) for spark ignited engines, provided the following criteria are met, and a

source test is conducted within twelve (12) months from the required compliance date.

a. A minimum of fifteen (15) minutes of runtime must be measured with data recorded at a minimum of fifteen (15), evenly spaced time intervals. Compliance is to be determined with the arithmetic average of the oxygen-corrected data.

b. The NO_x analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer calibration records shall be made available at the District's request.

c. The NO_x analyzer shall be checked with USEPA protocol span gas at the beginning and end of each test day. The results of these checks shall be recorded and copies submitted to the District with each engine test. If the NO_x analyzer exhibits more than a ten (10) percent deviation from the span check, the instrument must be re-calibrated. Any analysis performed prior to an end-of-day span check failure shall be void.

d. The test results of each engine, including span check results, shall be submitted to the District within thirty (30) days of the test date. Test results shall clearly identify the engine tested including owner, Location, permit or registration number, manufacturer, model, and serial number.

e. The NO_x analyzer utilized for each check shall be clearly identified in the material submitted with the test results. Identification shall include manufacturer and serial number of the analyzer used, and the last calibration date.

(b) Conduct emissions source testing with the engine operating either at conditions representative of normal operations or conditions specified in the permit or Rule 114 registration. For emissions source testing performed pursuant to subsection (F)(6) for the purpose of determining compliance with an applicable standard or numerical limitation, the arithmetic average of three (3) – thirty (30) – consecutive minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to fifteen (15) percent oxygen. For engines that comply with a percent reduction limit in Table 1, the percent reduction of NO_x emissions shall also be reported.

(c) In addition to other information, the source test protocol shall describe which critical parameters will be measured and how the appropriate range for these parameters shall be established. The range for these parameters shall be incorporated into the I&M Plan.

(d) Engines that are limited by permitor Rule 114 registration condition to be fueled exclusively with PUC quality natural gas shall not be subject to the reoccurring source test requirements of subsection (F)(6) for VOC emissions.

(e) Representative Testing

For Spark-Ignited Compression Ignition Engines, in lieu of compliance with the applicable requirements of subsection (F)(6), compliance with the applicable emission limits in subsection (C)(1) shall be demonstrated by submittal of annual emission test results, within thirty (30) days of the test date, to the District, from a unit or units that represents a specified group of units, provided all of the following are requirements are satisfied:

(i) The units are located at the same Facility;
(ii) The units were produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated capacity and operating specifications;
(iii) The units are operated and maintained in a similar manner; and
(iv) At least twenty (20) percent of the total number of units are tested during each annual test cycle.
(v) The District, based on documentation submitted by the Facility:
    a. Determines that the margin of compliance for the identical units tested is significant and can be maintained on an on-going basis; or
    b. Determines based on a review of sufficient emissions data that, though the margin of compliance is not substantial, other factors allow for the determination that the variability of emissions for identical tested units is low enough for confidence that the untested unit will be in compliance. These factors may include, but are not limited to, the following:
        1. Historical records at the tested unit showing consistent invariant load;
        2. Fuel characteristics yielding low variability and therefore assurance that emissions will be constant and below allowable levels; and/or
        3. Statistical analysis of a robust emissions data set demonstrates sufficiently low variability to convey assurance that the margin of compliance, though small, is reliable.

(f) Should any of the representative units exceed the required emission limits, or if the District notifies the operator that the criteria in subsection (F)(6)(e) has not been fulfilled, each of the units in the group shall individually demonstrate compliance by emissions testing. Failure to complete emissions testing within ninety (90) days of the failed test shall result in the untested units being in violation of this rule. After

compliance with the requirements of subsection (F)(6)(e) has been demonstrated, subsequent source testing shall be performed pursuant to subsections (F)(6)(a) or (F)(6)(e).

(G) Test Methods

Compliance with the requirements of subsection (C)(1) shall be determined, as required, in accordance with the following test procedures or any other method approved by USEPA and the APCO:

(1) Oxides of nitrogen - EPA Method 7E, or ARB Method 100.

(2) Carbon monoxide - EPA Method 10, or ARB Method 100.

(3) Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.

(4) Volatile organic compounds - EPA Method 25A or 25B, or ARB Method 100.

(5) Operating horsepower determination - any method approved by EPA and the APCO.

[SIP: Submitted as amended mm/dd/yy on mm/dd/yy]